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Light Intensity.— Professor Wiesner¹ now gives a detailed account of his measurements of light intensities, made chiefly in the Yellowstone Park, and reaches the conclusion that, with a clear sky, the intensity of the total daylight as well as that of the direct sunlight increases with the elevation above sea level, while the intensity of the diffused light decreases with increasing elevation but constant altitude of the sun. He further finds that the diffused light, in the course of the day, does not increase correspondingly to the increase of direct sunlight.

The greater intensity of the total daylight on the surface of the sea as compared to that on the main land, Professor Wiesner ascribes to the greater amount of light reflected by water surfaces.

H. Hus

Bilancioni's Dictionary.²— A capital model of a modern botanical dictionary is afforded by a little book recently published in the Italian language. Histology, anatomy, morphology, physiology, and the biology of plants are indicated among the topics treated, and 111 pages are given to a biographic account of distinguished botanists. The treatment of the several entries ranges from a mere indication of equivalence in the case of synonymous words to four pages (including a classification) for fruit, two and a half for germ-plasma, three and a half for protoplasm, eleven for tissues, etc. Plant names do not appear; but common Latin adjectival forms on which specific names have frequently been framed, are defined, and throughout the derivation of terms is given.

W. T.

Notes.— A little pamphlet of 109 pages, by Professor Bessey, has been issued by the University Publishing Company, of Lincoln, Nebraska, under the title *Elementary Botany*. Laboratory and field instructions are followed by a terse manual of the common genera of Nebraska plants.

One of the most attractive of recent elementary text-books is Miss

¹ Wiesner, J. "Beiträge zur Kenntnis des photochemischen Klimas des Yellowstone-Gebietes und einiger anderer Gegenden Nord Amerikas." *Denkschr. d. math. naturw. Kl., kaiserl. Akad. d. Wissensch., Wien*, vol. 80, 1906.

² Bilancioni, G. *Dizionario di botanica generale*. Milano, Hoepli, 1906. 16mo, xxi + 926 pp. 10 lire.

Stoneman's *Plants and their Ways in South Africa*. Familiar facts are supplemented by (to us) unfamiliar illustrations.

Some new plants from the Canadian Rockies and Selkirks are described by Miss Farr in *The Ottawa Naturalist* for August.

Vol. 7 of Engler and Prude's *Vegetation der Erde* is devoted to a part of West Australia, treated by Diels.

Chevalier gives an illustrated account of *Adansonia* in no. 6 of the current volume of the *Bulletin de la Société Botanique de France*.

Mr. A. D. E. Elmer has begun the publication, at Manila, of a new serial under the title *Leaflets on Philippine Botany*. The first number, dated April 8, is devoted to a paper on Philippine Rubiaceæ, by the editor.

Goodale has a note on the persistence of *Calluna* in Massachusetts in *The American Journal of Science* for August.

Viguier publishes the results of an anatomico-systematic study of Araliaceæ in ser. 9, vol. 4, nos. 1-3, of the *Annales des Sciences Naturelles, Botanique*, issued in July.

The flowering of *Agave palmeri* and *A. lecheguilla* is reported in the *Journal of the New York Botanical Garden* for August.

Aloe campylosiphon is figured by Berger in *Die Gartenwelt* of August 11.

Showers of conifer pollen in Mexico, and its accumulation on the water in the crater of Toluca, are recorded by Urbina in vol. 3, no. 7, of the *Anales del Museo Nacional de Mexico*.

An account of the poisoning of horses by *Equisetum arvense* is given by Peters and Sturdevant in the *19th Annual Report of the Agricultural Experiment Station of Nebraska*, which also contains a paper on a disease of the Cottonwood due to *Elfvigia megaloma*, by Heald, and a study of the relation of early maturity to hardness in trees, by Emerson.

The second supplement to vol. 1 of *The Philippine Journal of Science*, issued on June 15, is devoted to descriptions and figures of new Philippine ferns, by Copeland.

A fully illustrated article on fern buds is published by Kupper in *Flora* of July 25.

Evans contributes some notes on Japanese Hepaticæ to the *Proceedings of the Washington Academy of Sciences* for August.

A monograph of Swiss Myxomycetes, by Schinz, has been separately issued from Heft 6 of the *Mitteilungen der naturwissenschaftlichen Gesellschaft* in Winterthur, for 1906.

Portraits of Bateson and several other well known plant breeders or botanists are published in *The Gardeners' Chronicle* of August 4.

MacDougal discusses discontinuous variation in pedigree culture in *The Popular Science Monthly* for September.

Earle publishes a considerable paper on Cuban fungi, with numerous half-tone illustrations, in the *Primer Informe Anual de la Estación Central Agronómica de Cuba*, bearing date of June 1.

A scholarly study of *Jugendformen und Blütenreihe im Pflanzenreich*, by Diels, has been issued from the Bornträger press of Berlin, as an attractively printed, well illustrated pamphlet of 130 pages.

The double number of the *Botanische Zeitung* issued on July 15 is devoted to a paper by Vöchting on regeneration and polarity in the higher plants.

A study of the fall of the terminal buds, characteristic of certain trees, is separately issued by Tison from the *Bulletin de la Société Linnéenne de Normandie* for this year.

Details of experimental studies of the effect of frost on trees are given by Soranes in vol. 35, no. 4, of the *Landwirtschaftliche Jahrbücher*, issued in July.

A series of six well illustrated articles on the differentials of trees in winter was published by Professor Weed in the issues of *Forest and Stream* between January 6 and March 31, of this year.

A short appreciative note on Burbank is printed by de Vries in *The Independent* of May 17.

An illustrated account of the botanical garden of Cambridge, England, is given by Zahu in *Die Gartenwelt* for August 18.

An instructive discussion of variations in animals and plants is contributed by Jordan to *The Popular Science Monthly* for June.

An account of de Vries and his critics is given by Gager in *Science* of July 20.

A somewhat radical analysis of plant study and nomenclature is published by C. F. Baker in *Science* of May 25.

A plea for the proper use of "mega" and "macro" in terminology and nomenclature is published by Chamberlain in *Science* of May 25.

Papers on the flora of the Amazon region are being published by Huber in current issues of the *Boletim do Museu Goeldi* of Pará.

A list of the Bryophytes and higher plants — so far as determined — of the Lamao Forest Reserve is published by Merrill as vol. 1, supplement 1, of *The Philippine Journal of Science*; and a discussion of the vegetation of the Reserve, by Whitford, is contained in nos. 4 and 6 of the same volume.

A third part of de Wildeman's "Enumeration des plantes récoltées par Emile Laurent: . . . pendant sa dernière mission au Congo," issued in June from the Vanbuggenboudt press of Brussels, reaches p. 354 and pl. 106.

Vol. 4, part 4, and vol. 5, part 3, of Wood's *Natal Plants* have recently been issued, bringing the former volume to completion.

Further studies of the botany of Kerguelen, St. Paul, and New Amsterdam are being published by Schenck in the *Wissenschaftliche Ergebnisse der deutschen Tiefsee Expedition* of the *Valdivia*.

The seed and seedling of *Trollius albiflora* are described by Ramaley in *University of Colorado Studies* for March.

Further additions and changes are made in *Eschscholtzia* by Fedde in late numbers of *Repertorium Novarum Specierum*.

Professor Greene, in his *Leaflets* of June 5, expresses a belief in the existence of some hundreds of species of acaulescent violets in the United States, and a disbelief in the existence of any hybrids in the group.

An economic account of *Erodium cicutarium* in Arizona, by Thornber, forms *Bulletin no. 52* of the Agricultural Experiment Station of that Territory.

The genus *Neobrittonia* is proposed by Hochreutiner, in vol. 9 of the *Annuaire du Conservatoire et du Jardin Botaniques de Genève*, for the reception of *Sida acerifolia* Lag.

A large increase in the species of *Ptelea* is noted by Greene in vol.

10, part 2, of *Contributions from the U. S. National Herbarium*, issued in July.

Hybridization in *Eucalyptus* is analyzed by Maiden in vol. 10 of the *Report of the Australasian Association for the Advancement of Science*, recently distributed.

Piqueria, *Ophryosporus*, *Helogyne*, and other Eupatoriaceous Compositæ are the subject of new series 32 of "Contributions from the Gray Herbarium of Harvard University," by Robinson, which appears as vol. 42, no. 1, of *Proceedings of the American Academy of Arts and Sciences*.

An illustrated monograph of *Epilobium*, by Lévêillé, is being published in the *Bulletin de l'Académie Internationale de Géographie Botanique*.

A revision of 17 genera of North American Vernonioid Compositæ, by Gleason, has been separately issued from vol. 4, no. 13, of the *Bulletin of the New York Botanical Garden*.

A third paper on Canadian Antennarias is published by Greene in *The Ottawa Naturalist* for July.

Rhododendron vaseyi is figured in *Curtis's Botanical Magazine* for June.

An economic account of the mango and its diseases in Hawaii, by Higgins, forms *Bulletin no. 12* of the Hawaiian Agricultural Experiment Station.

A good account of the pecan and its varieties is given by Hume in *Bulletin no. 85* of the Florida Agricultural Experiment Station.

A mammoth plant of *Anthurium veitchi* is figured in *Möller's Deutsche Gärtner-Zeitung* of June 2.

A comprehensive thesis on the "Scobiform" seeds of orchids and other plants, by Hirt, forms no. 30 of the *Mitteilungen aus dem botanischen Museum der Universität, Zürich*.

An illustrated account of the cultivation and preparation of fiber from *Phormium* is given by Fulton in the *Annual Report* for 1905 of the New Zealand Department of Agriculture.

An important account of certain Indian bamboos is being published by Brandis in current issues of *The Indian Forester*.

Endlich gives an economic account of "Zacaton," — species of *Epicampes*, — in *Der Tropenpflanzer* for June.

The synonymy of *Eriophorum chamissonis* is discussed by Holm and Fernald in *The Ottawa Naturalist* for June.

Illustrations of the curious Karasaki specimen of *Pinus thunbergii* are given by Miyoshi on plates 29 and 30 of his *Atlas of Japanese Vegetation*.

A short illustrated account of *Sequoia sempervirens* is given by Elliott in *Forest Leaves* for June.

Morphological notes on Cycads are published by Seward in vol. 13, part 5, of the *Proceedings of the Cambridge Philosophical Society*.

Part 3 of Grout's *Mosses with Hand-Lens and Microscope* bears date June, 1906.

An account of the morphology of the fern stem, illustrated by *Dennstædtia punctilobula*, is published by Conard in no. 187 of the *Johns Hopkins University Circular*.

A monograph of *Scapania*, forming a quarto volume of 312 pages, with 52 plates, has been published by Müller as vol. 83 of the *Nova Acta der k. Leop.-Carol. deutschen Akademie der Naturforscher*.

A revision of the Chareæ of North America, by C. B. Robinson, is separately printed from vol. 4, no. 13, of the *Bulletin of the New York Botanical Garden*.

Part 2 of Holway's *North American Uredineæ* deals with species of *Puccinia* found on Moraceæ, Santalaceæ, Aristolochiaceæ, Polygonaceæ, Amarantaceæ, Portulacaceæ, Caryophyllaceæ, Cruciferæ, Saxifragaceæ, Crassulaceæ, and Rosaceæ. A notable feature of the work is the frequent illustration, by photo-micrographs from type material, of species reduced to the status of synonyms.

The effect of symbiotic fungi in the germination of *Odontoglossum* is illustrated by Bernard in *The Orchid Review* of July.

A contribution to a revision of the North American Hydnaceæ, by Banker, forms vol. 12, no. 2, of the *Memoirs of the Torrey Botanical Club*.

A preliminary list of some 500 higher fungi collected about St. Louis has been published by Glatfelter in vol. 16, no. 4, of the *Transactions of the Academy of Science of St. Louis*.

Further infection experiments with *Erysiphe graminis*, confirming the current conclusions as to its physiological differentiation on different hosts, are recorded by Reed in a paper separately printed from vol. 15, part 1, of the *Transactions of the Wisconsin Academy of Sciences, Arts, and Letters*.

Salmon figures the Venturias and associated Fusicladiums of apple and pear in *The Gardeners' Chronicle* of July 14.

Glæosporium psidii is shown by Sheldon, in *Bulletin 104* of the West Virginia University Agricultural Experiment Station, to develop an ascigerous stage pertaining to the genus *Glomerella*,—on the paraphyses of which he has a note in *Science* of June 1.

An illustrated paper on the fungi of scale insects is published by Parkin in vol. 3, part 1, of the *Annals of the Royal Botanic Gardens, Peradeniya*.

An account of fungi and plant diseases, by Clinton, forms part 5 of the *Report of the Connecticut Agricultural Experiment Station for 1905*.

A large number of foliar acarodomatia are described by de Wilde-man in vol. 30, no. 2, of the *Annales de la Société Scientifique de Bruxelles*.

An extensive study of palm germination is published by Gatin in the *Annales des Sciences Naturelles, Botanique* of June.

A further account of acarodomatia is given by Borzi in vol. 4, no. 1, of *Contribuzioni alle Biologia Vegetale*, published from the Botanical Institute of Palermo.

Three ferns and 199 flowering plants which grow on trees (without being epiphytes) in parts of Italy are enumerated by Ugolini in the *Commentari dell' Ateneo di Brescia* for 1905.

The sand dunes of Guardamar, and the planting effected on them, form the subject of an illustrated paper by Mira in vol. 4, no. 1-2, of the *Memorias de la R. Sociedad Española de Historia Natural*.

Bruck gives an account of wind injury to foliage in Heft 1 of vol. 20, part 2, of the *Beihefte zum botanischen Centralblatt*.

The biology of a large number of Dicotyledons, from germination to flowering, is traced and illustrated by Sylvén in the recently issued vol. 40, no. 2, of the *K. Svenska Vetenskapsakademiens Handlingar*.

Apogamy is recorded for *Dasyllirion acrotrichum* by Went and Blaauw in a separate from the Proceedings of February 24 of the *K. Akademie van Wetenschappen te Amsterdam*.

The conditions which effect the time of the annual flowering of fruit trees are analyzed by Sandsten in *Bulletin no. 137* of the University of Wisconsin Agricultural Experiment Station.

Britton and Viereck publish an extensive record of the insect visitors of orchard flowers in part 4 of the *Report of the Connecticut Agricultural Experiment Station for 1905*.

Mattei gives an account of pollination in Cupuliferæ (of which Castanea, Castanopsis, and Pasania are entomophilous) in vol. 4, no. 1, of the *Contribuzioni alla Biologia Vegetale* of the Botanical Institute of Palermo.

Graenicher contributes pollination notes to the April *Bulletin of the Wisconsin Natural History Society*.

Photograms of common weed seeds found with grass and clover seed are given by Garman in *Bulletin no. 124* of the Kentucky Agricultural Experiment Station.

An illustrated paper on common weeds and their eradication, by Wilson, forms *Bulletin no. 95* of the University of Minnesota Agricultural Experiment Station.

Notes on charcoal and on rubber and gutta-percha, with especial reference to the Philippines, form respectively *Bulletins no. 2 and 3* of the Bureau of Forestry of those islands.

Altamirano contributes an extensive illustrated paper on "guayule" to the May *Boletín de la Secretaría de Fomento* of Mexico.

A number of papers on the constituents of medicinal plants are published in the recently issued vol. 53 of the *Proceedings of the American Pharmaceutical Association*.

A number of northwestern plants are figured, in an economic connection, by Nelson in *Bulletin no. 73* of the Washington Agricultural Experiment Station.

An attractive little tree book, with half-tone illustrations, by Correvon, has been issued by the Atar Company, of Geneva.

Harshberger publishes on phytogeographic influences in the arts and industries of American aborigines in the April *Bulletin of the Geographical Society of Philadelphia*.

A special subscription edition of Bailey and Miller's *Cyclopedia of American Horticulture* has been issued by Doubleday, Page and Co., of New York, in six volumes bound to match their "Nature Library." To what was said of the first edition, from 1900 to 1902, in the *Naturalist* need only be added that the present (fourth) edition contains corrections of detected errors and a conspectus of families and genera prepared by Mr. Miller, while the number of illustrations has been greatly increased.

Under the title *Hortus Veitchii*, Mr. J. H. Veitch has privately printed a sumptuous quarto history of the great plant house of which he is now the head, which is of interest especially for the biographic sketches of its many explorers and hybridists and the remarkable list of plants originated or introduced to European gardens by them. Numerous excellent illustrations add to its attractiveness.

A portrait of Hollós forms the frontispiece to the *Journal of Mycology* for May.

A biographic sketch, with portrait, of C. C. Parry, is contributed to the July number of the *Annals of Iowa* by C. A. White.

A new relief portrait of Rumphius is figured in *Bulletin no. 34 van het Koloniaal Museum te Haarlem*.

The Journals.—*Botanical Gazette*, May:—Elmer, "New and Noteworthy Western Plants — III"; Bergen, "Some Littoral Spermatophytes of the Naples Region"; House, "New and Noteworthy North American Species of *Trifolium*"; Lewis, "The Basidium of *Amanita bisporigera*."

Botanical Gazette, June:—Wiegand, "Some Studies Regarding the Biology of Buds and Twigs in Winter"; Yamanouchi, "The Life History of *Polysiphonia violacea*"; Weiss, "The Structure and Development of the Bark in the *Sassafras*"; Hill, "The Distribution and Habits of some Common Oaks."

Botanical Gazette, July:—Jeffrey and Chrysler, "On Cretaceous *Pitoxyla*"; Shantz, "A Study of the Vegetation of the Mesa Region East of Pike's Peak: The *Bouteloua* Formation"; Nelson, "Contributions from the Rocky Mountain Herbarium — VII"; Peirce, "Anthoceros and its *Nostoc* Colonies"; Hill, "Distribution and Habits of some Common Oaks."